

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-10 (Previously Canceled).

Claim 11 (Currently Amended): A data retrieval method comprising:

storing a plurality of structured information data items in a first memory, each of the structured information data items including one or more elements, each of the elements including an element name and an element value;

storing, in a second memory, a plurality of element- value- patterns and a plurality of labels which correspond to the element- value- patterns respectively;

acquiring, from the second memory, one label of the labels which corresponds to the element name of each element by comparing the element value of each element with the element-value-patterns, the label corresponding to one of the element-value-patterns which matches the element value;

acquiring a plurality of data sets each including the label and the element name of each element whose element value matches one of the element-value-patterns corresponding to the label;

~~estimating a category of the element value of the each of the elements, to obtain a label corresponding to the category;~~

storing the data sets a plurality of data items in a third-second-memory, the element name of a respective of the elements and the label corresponding to the category of the element value of the respective element;

inputting a search request including a keyword and one ~~a label of the labels~~;
retrieving, from the third memory, one of the data sets ~~data items~~ which includes the one of the labels ~~label~~ included in the search request, to obtain the element name included in the one of the data sets ~~data items~~;

retrieving, from the first memory, one of the structured ~~information~~ data items which includes a first element whose element name is equal to the element name included in the one of the data sets ~~data items~~ and a second element whose element value includes the keyword;
and

outputting the element value of the first element.

Claim 12 (Currently Amended): A data retrieval method comprising:

storing a plurality of structured ~~information~~ data items in a first memory, each of the structured ~~information~~ data items including one or more elements, each of the elements including an element name and an element value;

storing, in a second memory, a plurality of element- value- patterns of the element value of each element and a plurality of labels which correspond to the element- value- patterns respectively;

acquiring, from the second memory, one label of the labels which corresponds to the element name of each element by comparing the element value of each element with the element- value- patterns, the label corresponding to one of the element- value- patterns which matches the element value;

acquiring a plurality of data sets each including the label and the element name of each element whose element value matches one of the element-value-patterns corresponding to the label;

~~estimating a category of the element value of the each of the elements, to obtain a label corresponding to the category;~~

~~storing the data sets a plurality of data items in a third-second memory, the element name of a respective of the elements and the label corresponding to the category of the element value of the respective element;~~

~~storing a plurality of word-patterns words and the a plurality of labels corresponding to the word-patterns words respectively, in a fourth third memory;~~

~~inputting a search request expressed in natural-language and including a plurality of words;~~

~~acquiring retrieving, from the fourth third memory, one of the labels which corresponds to one of the words included in the search request by comparing the words with the word- patterns, the one of the labels corresponding to one of the word- patterns which matches the one of the words, to obtain an acquired label;~~

~~extracting another of the words included in the search request as a keyword;~~

~~retrieving, from the third memory, one of the data sets items which includes the acquired label one of the labels, to obtain the element name included in the one of the data sets items;~~

~~retrieving, from the first memory, one of the structured information data items which includes a first element whose element name is equal to the element name included in the one of the data sets items and a second element whose element value includes the keyword; and~~

~~outputting the element value of the first element.~~

Claims 13-14 (Canceled).

Claim 15 (Currently Amended): A data retrieval apparatus comprising:

a first memory to store a plurality of structured information data items, each of the structured information data items including one or more elements, each of the elements having an element name and an element value;

a second memory to store a plurality of element- value- patterns and a plurality of labels which correspond to the element- value- patterns respectively;

a first acquiring unit configured to acquire, from the second memory, one label of the labels which corresponds to the element name of each element by comparing the element value of each element with the element- value- patterns, the label corresponding to one of the element- value- patterns which matches the element value;

a second acquiring unit configured to acquire a plurality of data sets each including the label and the element name of each element whose element value matches one of the element-value-patterns corresponding to the label;

~~an estimation unit configured to estimate a category of the element value of the each of the elements to obtain a label corresponding to the category;~~

~~a third second memory to store a plurality of the data sets items, each of the data sets items including the element name of the each of the elements and the label corresponding to the category of the element value of the each of the elements;~~

~~an input unit configured to input a search request including a keyword and one of the labels a label;~~

~~a first retrieval unit configured to retrieve , from the third memory, one of the data sets items which includes the one of the labels label included in the search request, to obtain the element name included in the one of the data sets items;~~

a second retrieval unit configured to retrieve , from the first memory, one of the structured information data items which includes a first element whose element name is equal to the element name included in the one of the data sets ~~items~~ and a second element whose element value includes the keyword;

an output unit configured to output the element value of the first element.

Claim 16 (Currently Amended): A data retrieval apparatus comprising:

a first memory to store a plurality of structured information data items, each of the structured information data items including one or more elements, each of the elements including an element name and an element value;

a second memory to store a plurality of element- value- patterns and a plurality of labels which correspond to the element- value- patterns respectively;

a first acquiring unit configured to acquire, from the second memory, one label of the labels which corresponds to the element name of each element by comparing the element value of each element with the element- value- patterns, the label corresponding to one of the element- value- patterns which matches the element value;

a second acquiring unit configured to acquire a plurality of data sets each including the label and the element name of each element whose element value matches one of the element-value-patterns corresponding to the label;

~~estimating a category of the element value of the each of the elements, to obtain a label corresponding to the category;~~

~~a third second-memory to store the data sets a plurality of data items, each of the data items including the element name of the each of the elements and a label corresponding to the category of the element value of the each of the elements;~~

a ~~fourth~~ third memory to store a plurality of word-patterns ~~words~~ and a ~~plurality of the~~ labels corresponding to the word-patterns ~~words~~ respectively;

an input unit configured to input a search request expressed in natural-language and including a plurality of words;

a third ~~acquiring first retrieval~~-unit configured to acquire ~~retrieve~~, from the fourth ~~third~~-memory, one of the labels which corresponds to one of the words included in the search request by comparing the words with the word- patterns, the one of the labels corresponding to one of the word- patterns which matches the one of the words, to obtain an acquired label;

an extracting unit configured to extract another of the words ~~included in the search request~~ as a keyword;

a first ~~second~~-retrieval unit configured to retrieve, from the third memory, one of the data sets ~~items~~ which includes the acquired label ~~one of the labels~~, to obtain the element name included in the one of the data sets ~~items~~;

a second ~~third~~ retrieval unit configured to retrieve, from the first memory, one of the structured ~~information~~ data items which includes a first element whose element name is equal to the element name included in the one of the data sets ~~items~~ and a second element whose element value includes the keyword;

an output unit configured to output the element value of the first element.

Claims 17-20 (Canceled)

Claim 21 (New): A computer readable storage medium storing instructions of a computer program which when executed by a computer results in performance of steps comprising:

storing a plurality of structured data items in a first memory, each of the structured data items including one or more elements, each of the elements including an element name and an element value;

storing, in a second memory, a plurality of element- value- patterns and a plurality of labels which correspond to the element- value- patterns respectively;

acquiring, from the second memory, one label of the labels which corresponds to the element name of each element by comparing the element value of each element with the element- value- patterns, the label corresponding to one of the element- value- patterns which matches the element value;

acquiring a plurality of data sets each including the label and the element name of each element whose element value matches one of the element-value-patterns corresponding to the label;

storing the data sets in a third memory;

retrieving from the third memory, when a search request including a keyword and one of the labels is input, one of the data sets which includes the one of the labels included in the search request, to obtain the element name included in the one of the data sets;

retrieving, from the first memory, one of the structured data items which includes a first element whose element name is equal to the element name included in the one of the data sets and a second element whose element value includes the keyword; and

outputting the element value of the first element.

Claim 22 (New): A computer readable storage medium storing instructions of a computer program which when executed by a computer results in performance of steps comprising:

storing a plurality of structured data items in a first memory, each of the structured data items including one or more elements, each of the elements including an element name and an element value;

storing, in a second memory, a plurality of element- value- patterns and a plurality of labels which correspond to the element- value- patterns respectively;

acquiring, from the second memory, one label of the labels which corresponds to the element name of each element by comparing the element value of each element with the element- value- patterns, the label corresponding to one of the element- value- patterns which matches the element value;

acquiring a plurality of data sets each including the label and the element name of each element whose element value matches one of the element-value-patterns corresponding to the label;

storing the data sets in a third memory;

storing a plurality of word-patterns and the labels corresponding to the word-patterns respectively, in a fourth memory;

acquiring from the fourth memory, when a search request expressed in natural-language and including a plurality of words is input, one of the labels which corresponds to one of the words included in the search request by comparing the words with the word-patterns, the one of the labels corresponding to one of the word- patterns which matches the one of the words, to obtain an acquired label;

extracting another of the words as a keyword;

retrieving, from the third memory, one of the data sets which includes the acquired label, to obtain the element name included in the one of the data sets;

retrieving, from the first memory, one of the structured data items which includes a first element whose element name is equal to the element name included in the one of the data sets and a second element whose element value includes the keyword; and
outputting the element value of the first element.